

## Index

### A

#### Activation controlled

17.5: Kinetics of Reactions in Solution

#### activity

13.2: Strong Monoprotic Acids and Bases

#### activity coefficient

13.2: Strong Monoprotic Acids and Bases

#### Allotropes

4.3: Formulas and Their Meaning

#### Anhydrous

9.9: Bonding in Coordination Complexes

#### antibonding

9.8: Molecular Orbital Theory

#### Avogadro's constant

4.2: Avogadro's Number and the Mole

#### Avogadro's law

6.2: Ideal Gas Model - The Basic Gas Laws

#### Avogadro's Number

4.2: Avogadro's Number and the Mole

#### azeotropes

8.9: Distillation

### B

#### band gap

9.11: Bonding in Semiconductors

#### barometer

2.3: The Measure of Matter

3.1: Units and Dimensions

#### battery

16.6: Batteries and Fuel Cells

#### biomagnification

11.6: Phase Distribution Equilibria

#### body centered cubic

7.8: Cubic Lattices and Close Packing

#### boiling point

7.5: Changes of State

#### bomb calorimeter

14.5: Calorimetry

#### bond dissociation energy

14.6: Applications of Thermochemistry

#### bond enthalpy

14.6: Applications of Thermochemistry

#### bond order

9.8: Molecular Orbital Theory

#### bonding molecular orbital

9.8: Molecular Orbital Theory

#### Boyle temperature

6.6: Real Gases and Critical Phenomena

#### Boyle's law

6.2: Ideal Gas Model - The Basic Gas Laws

#### Brownian motion

17.5: Kinetics of Reactions in Solution

### C

#### calorimetry

14.4: Thermochemistry and Calorimetry

14.5: Calorimetry

#### catalysis

17.6: Catalysts and Catalysis

#### catalysts

17.6: Catalysts and Catalysis

#### cathodic protection

16.8: Electrochemical Corrosion

#### cell potential

16.3: Cell Potentials and Thermodynamics

#### chain reaction

17.4: Reaction Mechanisms

#### Charles' Law

6.2: Ideal Gas Model - The Basic Gas Laws

#### chelate

9.9: Bonding in Coordination Complexes

#### chemical energy

2.2: Energy, Heat, and Temperature

#### chemisorption

17.6: Catalysts and Catalysis

#### chromatography

2.1: Classification and Properties of Matter

#### closed packing

7.8: Cubic Lattices and Close Packing

#### colligative properties

15.7: Some Applications of Entropy and Free Energy

#### colloid

7.10: Colloids and their Uses

#### conduction band

9.11: Bonding in Semiconductors

#### conjugated double bonds

9.7: The Hybrid Orbital Model II

#### conservation of energy

14.2: The First Law of Thermodynamics

#### coordination compound

9.9: Bonding in Coordination Complexes

#### coordination number

9.5: Molecular Geometry

#### corrosion

16.8: Electrochemical Corrosion

#### corrosion resistance

16.8: Electrochemical Corrosion

#### coupled reactions

15.6: Free Energy and Equilibrium

#### covalent bond

9.1: Three Views of Chemical Bonding

#### critical point

7.5: Changes of State

#### Crystallization

2.1: Classification and Properties of Matter

#### Cubic Lattices

7.8: Cubic Lattices and Close Packing

#### cumulene

9.7: The Hybrid Orbital Model II

### D

#### Dalton's Law of Partial Pressure

6.3: Dalton's Law

#### Daniell cell

16.7: Timeline of Battery Development

#### dative bond

9.4: Polar Covalence

#### degree of dissociation

13.4: Conjugate Pairs and Buffers

#### derived units

3.1: Units and Dimensions

#### diamagnetic

9.8: Molecular Orbital Theory

#### Diffusion Controlled

17.5: Kinetics of Reactions in Solution

#### dipole moment

9.4: Polar Covalence

#### distillation

2.1: Classification and Properties of Matter

8.9: Distillation

#### distribution coefficient

11.6: Phase Distribution Equilibria

#### distribution ratio

11.6: Phase Distribution Equilibria

### E

#### E.V.E.N. principle

6.2: Ideal Gas Model - The Basic Gas Laws

#### electrolysis

16.10: Electrolytic Cells and Electrolysis

#### electrolytic cell

16.10: Electrolytic Cells and Electrolysis

#### electronegativity

9.4: Polar Covalence

#### elementary reaction

17.4: Reaction Mechanisms

#### empirical formula

4.3: Formulas and Their Meaning

#### encounter pair

17.5: Kinetics of Reactions in Solution

#### enthalpy of vaporization

14.4: Thermochemistry and Calorimetry

#### entropy of mixing

15.5: Thermodynamics of Mixing and Dilution

#### entropy of solution

8.2: Thermodynamics of Solutions

#### equilibrium constant

11.3: Reaction Quotient

#### equivalence point

13.5: Acid/Base Titration

#### equivalent fraction

13.5: Acid/Base Titration

#### extensive property

2.1: Classification and Properties of Matter

### F

#### first law of thermodynamics

14.2: The First Law of Thermodynamics

#### formal charge

9.4: Polar Covalence

#### formula weight

4.3: Formulas and Their Meaning

#### fractionating column

8.9: Distillation

#### fuel cell

16.6: Batteries and Fuel Cells

### H

#### hardness

7.7: Ionic and Ion-Derived Solids

#### heat

14.4: Thermochemistry and Calorimetry

heat capacity

2.2: Energy, Heat, and Temperature

heat of atomization

14.4: Thermochemistry and Calorimetry

heat of vaporization

14.4: Thermochemistry and Calorimetry

heat transfer

14.1: Energy, Heat and Work

Hess' Law

14.4: Thermochemistry and Calorimetry

Hexagonal Closest Packed

7.8: Cubic Lattices and Close Packing

high spin

9.9: Bonding in Coordination Complexes

hybrid orbital

9.6: The Hybrid Orbital Model

hybridization

9.6: The Hybrid Orbital Model

hydrogen bonding

7.3: Hydrogen-Bonding and Water

hydrophobic effect

8.2: Thermodynamics of Solutions

## I

ice calorimeter

14.5: Calorimetry

ideal gas law

6.2: Ideal Gas Model - The Basic Gas Laws

indicators

13.5: Acid/Base Titration

insulator

9.11: Bonding in Semiconductors

intensive property

2.1: Classification and Properties of Matter

intermolecular forces

7.2: Intermolecular Interactions

interstitial sites

7.8: Cubic Lattices and Close Packing

ion pair

13.2: Strong Monoprotic Acids and Bases

ionic bond

9.1: Three Views of Chemical Bonding

ionic solid

7.7: Ionic and Ion-Derived Solids

ionization fraction

13.4: Conjugate Pairs and Buffers

## K

Kelvin

2.2: Energy, Heat, and Temperature

## L

Laing tetrahedron

7.1: Matter under the Microscope

Leveling Effect

10.3: Acid-base reactions à la Brønsted

lever rule

8.9: Distillation

ligand

9.9: Bonding in Coordination Complexes

liter (unit)

3.1: Units and Dimensions

low spin

9.9: Bonding in Coordination Complexes

lyophilic colloids

7.10: Colloids and their Uses

## M

mean free path

6.5: More on Kinetic Molecular Theory

mechanism

17.4: Reaction Mechanisms

metal

9.1: Three Views of Chemical Bonding

metallic bonds

9.10: Bonding in Metals

metric ton (unit)

3.1: Units and Dimensions

molar mass

4.3: Formulas and Their Meaning

molar volume

4.2: Avogadro's Number and the Mole

molecular orbital

9.8: Molecular Orbital Theory

Molecular orbital diagram

9.8: Molecular Orbital Theory

molecular weight

4.3: Formulas and Their Meaning

## N

normal melting

7.5: Changes of State

## O

octahedral hole

7.8: Cubic Lattices and Close Packing

osmosis

8.5: Colligative Properties - Osmotic Pressure

osmotic pressure

8.5: Colligative Properties - Osmotic Pressure

oxidation numbers

9.4: Polar Covalence

## P

paramagnetic

9.8: Molecular Orbital Theory

Pauli exclusion principle

5.5: The Quantum Atom

Pauling's rule

14.6: Applications of Thermochemistry

petroleum refining

8.9: Distillation

phase diagram

7.5: Changes of State

Phase Distribution Equilibria

11.6: Phase Distribution Equilibria

physisorption

17.6: Catalysts and Catalysis

PN Junction

9.11: Bonding in Semiconductors

Polar Covalence

9.4: Polar Covalence

polydentate ligand

9.9: Bonding in Coordination Complexes

Propagation of Error

3.2: The Meaning of Measure

Pseudoscience

1.2: Pseudoscience

## R

Rapid Equilibrium Approximation

17.4: Reaction Mechanisms

reaction quotient

11.3: Reaction Quotient

refractories

7.7: Ionic and Ion-Derived Solids

reverse osmosis

8.6: Reverse Osmosis

rounding

3.3: Significant Figures and Rounding off

rust

16.8: Electrochemical Corrosion

## S

Sabatier Principle

17.6: Catalysts and Catalysis

Sacrificial Coatings

16.8: Electrochemical Corrosion

semiconductor

9.11: Bonding in Semiconductors

SI units

2.3: The Measure of Matter

3.1: Units and Dimensions

significant figures

3.3: Significant Figures and Rounding off

simple cubic structure

7.8: Cubic Lattices and Close Packing

solvent cage

17.5: Kinetics of Reactions in Solution

solvent kinetic effect

17.5: Kinetics of Reactions in Solution

sp<sup>2</sup> hybrid orbital

9.6: The Hybrid Orbital Model

sp<sup>3</sup> hybrid orbital

9.6: The Hybrid Orbital Model

sp<sup>3</sup>d

9.7: The Hybrid Orbital Model II

sp<sup>3</sup>d<sup>2</sup> hybrid orbital

9.7: The Hybrid Orbital Model II

specific heat

2.2: Energy, Heat, and Temperature

spectrochemical series

9.9: Bonding in Coordination Complexes

standard state

14.4: Thermochemistry and Calorimetry

strong acid

13.2: Strong Monoprotic Acids and Bases

strong base

13.2: Strong Monoprotic Acids and Bases

super acid

13.2: Strong Monoprotic Acids and Bases

surface tension

7.3: Hydrogen-Bonding and Water

## T

tetrahedral hole

7.8: Cubic Lattices and Close Packing

The Nernst Equation

[16.4: The Nernst Equation](#)

thermal energy

[2.2: Energy, Heat, and Temperature](#)

thermosetting polymers

[7.9: Polymers and Plastics](#)

titration

[13.5: Acid/Base Titration](#)

titration analysis

[13.5: Acid/Base Titration](#)

titration curve

[13.5: Acid/Base Titration](#)

triple point

[7.5: Changes of State](#)

turnover number

[17.6: Catalysts and Catalysis](#)

## U

ultramicroscope

[7.10: Colloids and their Uses](#)

## V

vapor pressure

[7.5: Changes of State](#)

VSEPR

[9.5: Molecular Geometry](#)

## W

water of hydration

[9.9: Bonding in Coordination Complexes](#)

work

[14.1: Energy, Heat and Work](#)